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Reports on achievements in surveying, mapping and charting in addressing national, subregional, regional and global issues, including policy and institutional issues

Cooperation in the Baltic and Barents regions in joint database projects**

Paper submitted by Finland

Summary

The regions of the Baltic Sea and the Barents are, and in the future will be even more so, important transnational areas in Europe. Geographic information provides new opportunities for these regions and will be advantageous for all activities that require different kinds of information to be put together. A sustainable development requires a basis of mutual knowledge and understanding between the people of the region.

The mission of the Baltic and Barents projects (MapBSR and the Geographic IT within the Barents region, both in scale 1:1 million) is to bridge the gap between areas or regions, which are shared or affected by several countries, yet must be managed as a whole. For these transnational areas and situations it is essential to build shared spatial databases of known quality. From these experiences the Association of the European National Mapping Agencies, EuroGeographics (formerly Comité Européene des *Responsables* de la Cartographie Officielle (CERCO)), has initiated the idea of creating a European data set in the scale of 1:1 million, the "EuroGlobalMap", which aims at being the European contribution to the Global Mapping initiative.

Digital map of the Baltic Sea region (MapBSR)

Initially driven by the needs of environmental assessment in the Baltic Sea region, the MapBSR database now covers 13 countries partly or in full. The origin of the MapBSR is the Vision and Strategies around the Baltic Sea (VASAB) 2010 project, which was initiated in 1992 by the Baltic Region Ministers of Physical Planning. At the conference held in Karlskrona, Sweden, it was stated that a coordinated map data system should be created covering the entire Baltic Sea region with basic geographic information.

The participants of the MapBSR project are the National Mapping Agencies of the countries around the Baltic Sea. The National Mapping Agencies of each of the participating countries have produced data regarding their own area. The national data has been combined into one database by the MapBSR project coordinator, National Land Survey of Finland. The MapBSR project has received funding from the European Union INTER-REG II C programme.

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The database has data from the countries around the Baltic Sea. Totally covered are Finland, Sweden, Denmark, Poland, Latvia, Lithuania, Estonia and Belarus. The administrative units from Germany, Czech Republic, Slovak Republic, Ukraine and the Russian Federation that intersect the Baltic Sea drainage area are included in the database.

The MapBSR database is digital, uniform map database for the Baltic Sea region in the scale of 1:1 million. The elements included in the database are administrative boundaries, hydrography, transport, settlements, geographical names, elevation and nature. The database can serve as a base map for geographic information systems (GIS), in which any kind of data item can be located and presented as long as its coordinates are known. The MapBSR database can be used by private individuals, organizations and government authorities for a wide variety of purposes (for example spatial planning and transnational cooperation).

The MapBSR database can be obtained in vector data in Arc/Info format on CD-ROM. The coordinate system is geographical coordinates in decimal degrees (longitude and latitude). The reference system is WGS84 (EUREF89) with ellipsoid WGS84. Database will be updated regularly. The product MapBSR 2000 is now available on CD-ROM (www.mapbsr.nls.fi).

Geographic information technology within the Barents region

In 1993, an international agreement was signed between Norway, Sweden, Finland, Denmark, Iceland, Russia and the European Union to develop cooperation for economic growth and sustainable development in the Barents region. The agreed cooperation is implemented through action plans such as the Barents Programme and the Interregional Programme of the European Union. In the work to prepare the action plans, a clear need for a common base map and other geographical descriptions were identified.

During the period from 1998 to 2000 the first step of the "Geographic Information Technology (IT) within the Barents Region" has been executed through a cooperation project between the Mapping Agencies in Norway, Sweden, Finland and Russia and the Regional Committees for Land Resources and Surveying in Murmansk and Arkhangelsk *oblast* and the Republic of Karelia in Russia. This project includes several activities regarding competence development, establishment of digital databases and printed maps, statistical data, atlas, data communication and so forth.

The project has developed a common standard for the homogenous geographic database, produced data in accordance with the common standard in a scale of 1:1M and made the database available for the different users in the region. Furthermore, modern geographic information technology has been introduced in the Russian Federation and producers and users have been trained in the use of the modern technology. A map series has been printed in the scale of 1:1,000,000.

The immediate beneficiaries, and also the most important reference organizations of the project, are the Russian and Nordic regional governments and especially the professionals at the Committees for Land Resources and Land Surveying of Karelia and of the Murmansk and Arkhangelsk regions in Russia, where they have increased their productivity through improved competence, work practices and the use of hardware and software. The same impact has also been achieved, but to a smaller extent, in all units of the National Mapping Agencies that have taken part in the project.

The secondary beneficiaries are the other public sector authorities and enterprises throughout the whole Barents region and in the participating countries that will be given access to the Barents Geographic Data Base. The ultimate beneficiaries are the people living in the Barents region, who will, in the long term, receive improved services from both the public authorities and private enterprises dealing with planning, land management, marketing studies, environment, renewable energy resources, emergency services, health care, political analysis and many other areas of use.

The second and final phase of the project "Geographic IT within the Barents Region" aims at establishing of an Internet-based infrastructure for joint use of geographic and thematic data in the Barents region. This will be achieved through cooperation between the National Mapping Agencies and their local branches in the region, which will include institutional development, capacity- and competence-building and exchange of expert knowledge. The thematic and other databases will be coordinated according to the already established standard for the whole region and made available for use by the authorities and the general

public in the region. Further information can be obtained from: www.nls.fi/org/inter/barents_git.

European contribution to the Global Map Database

The Association of the European National Mapping Agencies, EuroGeographics, covers today some 36 countries. As a major building block of the European Regional Spatial Data Infrastructure (RSDI), it celebrated its twentieth anniversary in 2000. The Association's 20 years are marked by many concrete achievements, such as pan-European data sets and information services.

The success of the Digital Map of the Baltic Sea Region (MapBSR) and the actual increasing demand for a seamless European data set led to considering the extension of the concept to the whole of Europe. The feasibility of this extension was addressed in a study that assessed the data availability, the technical issues involved and the economical and financial implications of creating such a product. As learned from the questionnaire included in the feasibility study, most of the European National Mapping Agencies see the benefit of creating a seamless database covering all of Europe.

At the time that the MapBSR project evolved in the Baltic Sea region, the Global Mapping initiative also approached the European National Mapping Agencies by asking for cooperation in creating a global database in scale 1:1 million. Global Map defines itself as a group of global geographic data sets of known and verified quality, with consistent specifications, which will be open to the public, considered a common asset of mankind and distributed worldwide at marginal cost. More information on Global Mapping can be found at: www1.gsi-mc.go.jp/isegm-sec/index.html.

As response to this Global Mapping approach, the European National Mapping Agencies have together decided to build their own regional component of the Global Map, "the EuroGlobalMap". The reason for that decision is that the European Agencies found it important to create a seamless database for the region, not just a puzzle of data from separate countries. The Project Agreement to start the *EuroGlobalMap*-project by the Association of the European National Mapping Agencies is aimed to be signed at the beginning of 2001. The Project management of this project is entrusted to the National Land Survey of Finland.